

REMARKS

In the Office Action mailed April 11, 2006, the Examiner rejects claims 2, 4, 6, 11, 26, 31, 33, 39, 43, 50, and 51 under 35 U.S.C. § 112, second paragraph as being indefinite; rejects claims 1-7, 9-29, 31-41, 43-49 under 35 U.S.C. § 102(e) as being anticipated by Bradbury et al. (U.S. Patent Application Publication No. 2002/0007294) ("Bradbury"); and rejects claims 1-7, 9-29, 31-41, and 43-51 as being anticipated by Jayaram et al. (U.S. Patent Application Publication No. 2002/0123812) ("Jayaram").¹

By this amendment, Applicant cancels claims 2-9, 11-13, 15, 17-26, 29-33, 35-37, 39-45, 47, and 49-51, and amends claims 1, 10, 14, 16, 27, 28, 34, 38, 46, and 48. Based on the following arguments, Applicant respectfully traverses the Examiner's rejection of pending claims 1, 10, 14, 16, 27, 28, 34, 38, 46, and 48 under 35 U.S.C. § 102(e). Because claims 4, 6, 11, 26, 31, 39, 43, 50, and 51 have been canceled, the 35 U.S.C. § 112, second paragraph rejections are now moot.

I. Interview Held on May 31, 2006

Applicant appreciates the opportunity to discuss the Office Action with the Examiner on May 31, 2006. During the interview, the Examiner maintained his position that *Bradbury et al.* discloses simulating a web-based model. The Examiner also asserted that *Jayaram* discloses a web-based model based on its

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether or not any such statement is identified herein, Applicant declines to automatically subscribe to any statement or characterization in the Office Action.

single use of the word "HTML" and based on its disclosure of a computer that includes a network interface that connects to the Internet. Although Applicant disagrees with the Examiner's position, to expedite the prosecution of this application, Applicant amends the claims and presents the following arguments for the Examiner's consideration.

II. Neither *Bradbury et al.* nor *Jayaram et al.* teach or suggest the claimed method, system, or computer-readable medium.

In order to properly anticipate Applicant's claimed invention under 35 U.S.C. § 102(e), each and every element of the claim at issue must be found, either expressly described or under principles of inherency, in a single prior art reference. Further, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." See M.P.E.P. § 2131. Finally, "[t]he elements must be arranged as required by the claim." *Id.*

Amended independent claims 1, 27, and 38 recite a number of elements that are not anticipated or suggested by *Bradbury et al.* or *Jayaram et al.* For example, claim 1 recites the following:

(Currently Amended) A method for simulating operation of a machine component, comprising:
establishing and storing a first original engineering model of a machine component and additional original engineering models for a set of sub-components of the machine component, wherein each of the sub-components is compatible for use with the machine component;
lightening the first original engineering model to establish a first lightened engineering model and lightening each of the additional original engineering models to establish additional lightened engineering models, the lightened engineering models including less data than their respective original engineering models;

storing the lightened engineering models at a server system;

displaying, in a web browser at a client system, a web page including a selection area for selecting the machine component;

receiving, at the server system, selection data from a user, the selection data selecting the machine component from the web page;

in response to the selection data:

displaying the first lightened engineering model in the browser at the client system, thereby establishing a web-based model of the machine component based on the selection data and the first lightened engineering model; and

presenting a list of the set of additional lightened engineering models in the web browser at the client system as selectable sub-components;

receiving a selection, from the plurality of additional lightened engineering models in the web browser, of one or more of the sub-components to add to the web-based model;

adding one or more of the sub-components to the displayed web-based model to create an updated web-based model, and displaying the updated web-based model in the web browser;

providing, to the user, one or more options reflecting different simulation environments for simulating operation of the web-based model of the configured component;

receiving a selection from the user reflecting a selected simulation environment; and

simulating operation of the updated web-based model in the selected simulation environment.

Bradbury et al. fails to disclose these features. For example, the Examiner previously asserted that *Bradbury et al.* teaches lightening an engineering model by removing material from a multi-dimensional model. See paragraph [0026]. However, claim 1 now recites lightening a first original engineering model of a machine component and lightening additional original engineering models for a set of sub-components of the machine component, wherein each of the sub-components is compatible for use with the machine component. *Bradbury et al.* fails to disclose this feature.

Moreover, *Bradbury et al.* does not teach displaying a web page including a selection area for selecting a machine component, receiving at a server system selection data selecting the machine component from the web page, and in response to the selection data, displaying the first lightened engineering model in the browser and presenting a list of the set of additional lightened engineering models in the web browser. Consequently, *Bradbury et al.* fails to disclose the claimed web-based model or adding one or more of the sub-components to the displayed web-based model to create an updated web-based engineering model.

Furthermore, *Bradbury et al.* fails to disclose providing a user with one or more options reflecting different simulation environments for simulating operation of the updated web-based model. Instead, *Bradbury et al.* only makes reference to a single design environment. The Examiner recites that paragraph 27, lines 5-8 of *Bradbury et al.* recite this features. However, this portion of *Bradbury et al.* merely discusses a “multi-dimensional” model, defined in paragraph 21 as “a geometric description of the entire surface of a solid object.” This is different from the claimed different simulation environments.

Thus, *Bradbury et al.* falls short of teaching or suggesting establishing engineering models, lightening each engineering model, selecting the lightened models from a web page, selecting a simulation environment, and then simulating operation of an updated web-based model in the selected simulation environment, as recited in claim 1. In other words, *Bradbury et al.* simply fails to disclose the combination of steps now claimed in claim 1.

Jayaram et al. also fails to disclose the features recited in claim 1.

Jayaram et al. discloses a single virtual reality design environment that uses specialized computer software, such as a ProE and a ProD design tool, to perform design assembly. See, e.g., *Jayaram et al.*, paragraphs 80, 81.

Jayaram et al., however, does not disclose simulating *operation* of an updated web-based model created from a machine component and at least one sub-component of the machine, as recited in claim 1.

Notably, *Jayaram et al.* fails to disclose or suggest displaying a web page including a selection area for selecting a machine component, receiving at a server system selection data selecting the machine component from the web page, and in response to the selection data, displaying the first lightened engineering model in the browser and presenting a list of the set of additional lightened engineering models in the web browser. Consequently, *Jayaram et al.* fails to disclose or suggest the claimed web-based model or adding one or more of the sub-components to the displayed web-based model to create an updated web-based engineering model.

Despite *Jayaram et al.*'s single use of the term "HTML" and disclosure of a network interface connected to the Internet, *Jayaram et al.* does not disclose or suggest the use of a web browser to implement its virtual reality system. Instead, *Jayaram et al.* uses a specific virtual reality software program to run its single virtual environment. See *Jayaram et al.*, Fig. 5; paragraph 86, "ProEngineer."

Moreover, claim 1 now recites that a server system stores a number of lightened engineering models and that the server system receives selection data

from a browser at a client system. *Jayaram et al.*, however, does not disclose the use of a server system at all. Rather, *Jayaram et al.* only discloses a single computer that runs the virtual reality application software. Thus, although *Jayaram et al.* describes that the computer has a network interface connected to the Internet, it does not describe the web-based models as recited in claim 1. That is, the mere use of a network interface with the computer disclosed by *Jayaram et al.* does not disclose, imply, or suggest that, for example, *Jayaram et al.*'s virtual reality software communicates with a server to select a machine component. *Jayaram et al.* instead does not use a web browser but instead relies on a specific ProEngineer software to implement its virtual reality system.

Finally, *Jayaram et al.* does not disclose lightened engineering models or using lightened engineering models to create web-based models displayed in a web browser, as claimed. *Jayaram et al.* only discloses generally using a triangle decimation process to reduce the size of data in a virtual reality software application. *Jayaram et al.*, however, does not use the decimation process for use with web based models. Claim 1, however, recites lightening different engineering models, and displaying the lightened engineering models in a web browser. As such, *Jayaram et al.* does not disclose the claimed "lightened engineering models" in the context of the method of claim 1.

Accordingly, because neither *Bradbury et al.* nor *Jayaram et al.*, either alone or in combination, disclose the features of claim 1, Applicant requests that the rejection of claim 1 over *Bradbury et al.* and over *Jayaram et al.* be withdrawn and the claim allowed. Claims 27 and 38, although different in scope from claim

1, are distinguishable over the cited art for reasons similar to those discussed with regard to claim 1. Therefore, Applicant requests that the rejection of claims 27 and 38 over *Bradbury et al.* and over *Jayaram et al.* be withdrawn and the claims allowed.

Claims 10, 14, 16, 28, 34, 46, and 48 depend from respective claims 1, 27, and 38, and are therefore allowable for at least the same reasons set forth in connection with claims 1, 27, and 38. In addition, claims 10, 14, 16, 28, 34, 46, and 48 recite additional features that are not disclosed in the cited art. For example, the cited art fails to teach, *inter alia*, that the first original engineering model includes a 3D image model of the machine component and textual data, wherein lightening the first original engineering model includes removing both image and textual data from the first original engineering model, as recited in claim 10. Further, the cited art fails to teach that the updated web-based model is a model of a self-propelled mobile machine, that simulating operation includes simulating using the machine to move a load of virtual construction-related objects in the selected environment, or providing, to the user, feedback data reflecting the size of the load that fits into the selected model of the machine within the selected environment, as recited in claim 14. Notably, the cited art does not disclose or suggest a model of a self-propelled machine, or simulating using the machine to move a virtual load, or providing feedback data related to the load, the machine, and the selected environment. Claims 28 and 46, although different in scope from claim 14, are distinguishable over the cited art for reasons similar to those discussed with regard to claim 14.

Also, the cited art does not teach that the selection area for selecting a machine component includes a list of different option packages for the machine, and wherein the selected simulation environment includes a work site environment for the machine to virtually operate within, as recited in claim 16. The cited art also does not teach selecting, by the user, an option package from the selection area and a work site environment from the different simulation environments, simulating operation of the selected machine component and its selected option package in the selected work site environment, and providing, to the user, feedback data reflecting the ability of the selected machine component and its selected option package to operate in the selected work site environment, as further claimed in claim 16. Claims 34 and 48, although different in scope from claim 16, are distinguishable over the cited art for reasons similar to those discussed with regard to claim 16.

Accordingly, Applicant requests the rejection of claims 1, 10, 14, 16, 27, 28, 34, 38, 46, and 48 be withdrawn, and the claims allowed.

IV. Conclusion

In view of the foregoing remarks, Applicant submits that this claimed invention is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicant therefore requests the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and
charge any additional required fees to our deposit account no. 06-0916.

Respectfully submitted,

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